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A review and synthesis of programming and techniques useful in providing vocational education to handicapped secondary and postsecondary school students is presented in this information analysis paper. Information and insights are given so that vocational administrators and supervisors can assess their efforts to provide equal opportunities for the handicapped to participate fully in all facets of vocational education including youth organizations, cooperative vocational education, vocational guidance services, and consumer education. Also, practical suggestions are included for effectively accommodating handicapped students through both regular and special instructional arrangements. Specific topics discussed include the following: rationale for the participation of the handicapped in vocational education, barriers to participation, impact of legislation, identifying the handicapped, developing appropriate program alternatives for serving the handicapped, prevocational education, role of vocational education in comprehensive secondary programming for the academically handicapped, need for interagency cooperation, curriculum and instructional materials to assist in vocational training, personnel preparation, evaluation of students and programs, and professional organizations. The conclusion is made that emphasis of the future must be one of equal access and maximum accommodation. The appendix contains descriptions of information systems on the handicapped. (TA)

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VOCATIONAL
EDUCATION FOR THE HANDICAPPED:
A REVIEW

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U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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FOREWORD

The Educational Resources Information Center on Career Education (ERIC/CE) is one of sixteen clearinghouses in a nationwide information system that is funded by the National Institute of Education. The scope of work for ERIC/CE includes the fields of adult-continuing, career, and vocational-technical education. One of the functions of the Clearinghouse is to interpret the literature that is related to each of these fields. This paper on vocational education for the handicapped should be of particular interest to vocational and technical education teachers, supervisors, and administrators.

The profession is indebted to Marc E. Hull, Texas A&M University, for his scholarship in the preparation of this paper. Recognition is also due Allen Phelps, Pennsylvania State University, and Marion Johnson and Carole Johnson, The Center for Vocational Education, The Ohio State University, for their critical review of the manuscript prior to its final revision and publication. Wesley E. Budke, Vocational-Technical Specialist at the ERIC Clearinghouse on Career Education, supervised the publication's development. Madelon Plaisted and Jo-Ann Cherry coordinated the production of the paper for final publication.

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A review and synthesis of programing and techniques useful in providing vocational education to handicapped secondary and post-secondary school students is presented in this information analysis paper. Information and insights are given so that vocational administrators and supervisors can assess their efforts to provide equal opportunities for the handicapped to participate fully in all facets of vocational education including youth organizations, cooperative vocational education, vocational guidance services, and consumer education. Also, practical suggestions are included for effectively accommodating handicapped students through both regular and special instructional arrangements. Specific topics discussed include the following: Rationale for the participation of the handicapped in vocational education, barriers to participation, impact of legislation, identifying the handicapped, developing appropriate program alternatives for serving the handicapped, prevocational education, role of vocational education in comprehensive secondary programing for the academically handicapped, need for interagency cooperation, curriculum and instructional materials to assist in vocational training, personnel preparation, evaluation of students and programs, and professional organizations. The conclusion is made that emphasis of the future must be one of equal access and maximum accommodation. The appendix contains descriptions of information systems on the handicapped. (TA)

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*Vocational Education; Literature Reviews; Special Education;
*Handicapped Students; Educational Assessment; *Regular Class
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Education; Curriculum Development

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INTRODUCTION

Vocational education, it is said, is for everyone who can benefit by it and who desires to participate. This generous expression accessibility appears in virtually every law, regulation, or policy which deals with vocational education and is repeatedly emphasized before congressional hearings, state conventions, and open house gatherings. Enrollment data, however, show that the primary beneficiaries of vocational education have been middle class, academically average students. By comparison, the disadvantaged and the handicapped have been greatly underrepresented in vocational education (Lee, 1976). This does not imply, however, that vocational programs or services have not been provided for these groups. To the contrary, endeavors to serve such groups as the handicapped have been sufficiently successful in emphasizing the need for greatly expanded efforts on their behalf at both the secondary and postsecondary levels.

This paper reviews the role that vocational education has played in the career development of the handicapped up to this time and discusses the expanded role it must assume if it is to be made available to all handicapped persons who can profit by it. Information and insights are given so that vocational administrators and supervisors can assess their efforts to provide equal opportunities for the handicapped to participate fully in all facets of vocational education, including youth organizations, cooperative vocational education, vocational guidance services, and consumer education. Also, practical suggestions are included for effectively accommodating handicapped students through both regular and special instructional arrangements.

RATIONALE FOR THE PARTICIPATION OF THE HANDICAPPED IN VOCATIONAL EDUCATION

The need to adequately serve the handicapped is by no means a new issue in vocational education. The Vocational Education Act of 1963 singled out the handicapped as a population for whom improved programs and services were urgently needed (Walsh, Breglio, and Langlois, 1974). Five years later when the 1968 amendments to the act were enacted by Congress, the handicapped again were given priority status, this time with designated funds; 10 percent of each state's basic grant for vocational education. Money, as it turned out however, was not a sufficient incentive to bring about the comprehensive programming that was needed to appropriately serve the handicapped in vocational education.

Even though the money was on hand for program development, most state and local leaders in vocational education initially were not prepared to design and implement the numerous alternatives needed to adequately accommodate the handicapped. Moreover, few vocational leaders were able to envision the full extent to which the handicapped could be involved in vocational education. Consequently, most states initially used their 10 percent set-aside monies mainly to develop special vocational programs for the handicapped in segregated settings. What vocational leaders appeared to be lacking in many instances was an appropriate rationale for including the handicapped in vocational education.

Perhaps the strongest rationale that can be given for advocating the active participation of the handicapped in vocational education is their performance record in the world of work. The President's Committee on Employment of the Handicapped (n.d.) has reported, for example, that the work record of the handicapped compares favorably with the nonhandicapped in every conceivable way--their ability to perform tasks, their safety records, their attendance, their advancement, and more. Acknowledgment of the fact that the handicapped can succeed comparably to the nonhandicapped in virtually every type of employment strongly suggests that they should participate on an individual basis in all types of vocational training programs. Unfortunately, their participation has been very limited.

The U.S. Employment Service views the participation of the handicapped in employment from a rather intriguing perspective--one which suggests an appropriate rationale for serving the handicapped in vocational education:

There is no clear division, no definition that will adequately distinguish the handicapped individual from the presumably fully functioning person. No one can do everything; in fact, most people function best within a relatively limited range of occupational tasks. A person who can readily handle the physical requirements of an insurance salesman's job may be totally unable to cope with the rigors of the longshoreman's tasks. Someone who can serve competently as a cafeteria supervisor may be hopelessly lost in the more abstract world of the systems analyst. In one way or another, everyone is handicapped. (p. 1)

If one can accept the premise that all persons are vocationally limited (or handicapped), then denying any particular group access to appropriate vocational education solely on the basis of a handicap constitutes an act of discrimination. And, as many school districts have learned--or will ultimately learn--discrimination in any form is much too costly to perpetuate at public expense.

Possessing marketable vocational skills is one of the most impressive credentials that anyone can present to a prospective employer. For the handicapped, possessing marketable skills is proof of their ability to perform specific job functions and goes a long way in eliminating or reducing the anxieties that employers express about hiring the handicapped. Participation in vocational education, therefore, could be viewed as an essential pathway to employment for many handicapped persons--especially for individuals whose formal education will terminate with high school. Many handicapped persons have come to regard vocational preparation as a basic necessity, which is yet another appropriate rationale for serving the handicapped in vocational education.

Economic considerations also constitute a convincing rationale for the inclusion of the handicapped in vocational education. Edwin Martin (1974), U.S.O.E. Deputy Commissioner for the Bureau of Education for the Handicapped, estimates that the cost of maintaining a handicapped person in an institution exceeds a quarter of a million dollars over a lifetime. By comparison, vocational education for the handicapped appears to be extremely cost effective.

When a sufficient rationale for serving the handicapped has been established, the barriers which limit their participation in vocational education must then be addressed.

BARRIERS TO THE PARTICIPATION OF THE HANDICAPPED IN VOCATIONAL EDUCATION

The authors of *Barriers and Bridges*, an informative publication developed by the California Advisory Council on Vocational Education (Phillips, Carmel, & Renzullo, 1977) emphasize the fact that the handicapped have the same needs and goals as the nonhandicapped, including the need "to select and prepare for vocations and avocations of their choice: to engage in work that is satisfying; to upgrade their skills and advance in careers" (p. 19). The report goes on to say, however, that handicapped persons are confronted by numerous barriers which circumvent the fulfillment of these needs. In November of 1976, the President's Committee on Employment of the Handicapped brought together some 200 leaders from industry, vocational rehabilitation, employment security, education, and consumer groups and asked them to identify the principal barriers which impeded pathways to employment for the handicapped. The White House Conference on the Handicapped, which was convened in May of 1977, also addressed many of the barriers which limit the participation of the handicapped in employment and in society as a whole. Table 1 lists some of the barriers identified by these various groups.

Table 1. Barriers Which Impede The Participation of the Handicapped
in Vocational Education*

Source of Barrier	Nature of Barrier
Barriers within society	Apathy and indifference due to a lack of knowledge and awareness about the handi- capped
	Reluctance to embrace those who are dif- ferent and to part with stereotypes
	Tendency to focus on inabilities rather than abilities
	Inaccessible buildings, travelways, and public transportation
	Inadequate public leadership promoting the causes of the handicapped
Barriers within the helping system	Competing demands for attention, time dollars, and priority status
	Lack of inter-agency cooperation, coordina- tion, and planning
	Lack of a planned continuum of services
	Lack of knowledge of services needed on the part of program administrators, developers, and evaluators
	Insufficient use of handicapped persons and parents of the handicapped in the planning of programs and services
	Inadequate preservice and inservice personnel development

Table 1--*continued*

Barriers within handicapped persons, their families, and advocates	Tendency to foster or accept dependence rather than train independence
	Lack of knowledge about opportunities, services and rights
	Oversensitivity to criticism and teasing
	Inadequate career counseling and guidance
	Tendency to give in to pressure, to conform to inferior roles and expectations
	Lack of self-understanding and appreciation

*This list is based in part on the content of Phillips, Carmel, & Renzullo; *Barriers and Bridges*, California Advisory Council for Vocational Education (1977).

Many of the barriers which limit the participation of the handicapped in vocational education can be eliminated; for those barriers that are more permanent in nature, bridges must be ultimately built which bypass them. Recent legislation and litigation are excellent examples of the efforts that are underway to eliminate or to bypass some of the barriers that heretofore have limited the participation of the handicapped in vocational education.

IMPACT OF LEGISLATION ON VOCATIONAL EDUCATION FOR THE HANDICAPPED

Virtually all programs and services offered to the public by public-supported agencies have come under increased federal regulation in an effort to achieve equal rights and opportunities for all citizens (Martin, 1977). This is clearly evident in education, and particularly in the education of the handicapped. In recent months, for example,

three major pieces of legislation and accompanying sets of regulations have been passed which pertain in some way to the education of the handicapped. Because of this, vocational educators will have considerably less latitude in determining how and to what extent they will serve the handicapped but will have a greater participatory role in defining and planning appropriate programming. According to some public analysts, the recent legislation and regulations of the type discussed in the following paragraphs may very well be only a prelude to increased federal regulation of education.

EDUCATION OF ALL HANDICAPPED CHILDREN ACT (PUB. L. 94-142)

In November of 1975, President Ford signed the Education for All Handicapped Children Act, which is now Pub. 94-142. Passed almost unanimously by both houses of the Congress, the act guarantees a free, appropriate public education for all handicapped children, ages 3 to 21. Phelps and Halloran (1976a) note several provisions of the act which will have an impact on vocational education:

1. Assurance that individualized, written educational plans will be developed and maintained for each student.
2. A guarantee of complete due process procedures.
3. Assurance that students will be served in the "least restrictive educational environment"... Restrictive environments, such as special classes or special schools, are to be utilized only when the nature or severity of the handicap is such that supplementary services and aids provided in regular classes are ineffectual.
4. Assurance of nondiscriminatory testing and evaluation.
5. Policies and procedures to protect the confidentiality of student records (p. 37).

The implementation of Pub. 94-142 will require the involvement of all segments of public education. Vocational education, most assuredly, will increase for the handicapped because an appropriate education for most handicapped persons will include vocational preparation at the secondary or postsecondary level.

THE EDUCATION AMENDMENTS OF 1976
(PUB. L. 94-482)

The Vocational Education sub-part of the Education Amendments of 1976, Title II, must be considered in conjunction with Pub. L. 94-142 and Sections 503 and 504 of the Rehabilitation Act of 1973. The three acts are, to some extent, complementary and responsibility for their implementation will be assumed by the same educational leader at any given level, that is, the local superintendent of education, the chief state school officer, the U.S. commissioner of Education, and the secretary of Health, Education, and Welfare. In terms of serving the handicapped, Pub. L. 94-482 requires states, which wish to receive federal vocational education funds, to meet the following conditions:

1. Give assurances that federal vocational set-aside monies for the handicapped will be used in a manner consistent with the goals of Pub. L. 94-142. The state plan for vocational education must be consistent with the state plan for education of the handicapped.
2. Give assurances that the handicapped (and other special needs groups) have equal access to the programs and services available to the nonhandicapped.
3. Describe programs and services to be provided for the handicapped in annual and five year state plans.
4. Expend 10 percent of their basic state grants on the handicapped and match these federal monies on a 50/50 basis.
5. Insure representation of the handicapped on national and state vocational advisory councils for vocational education.

Assuredly, the implementation of Pub. L. 94-482 and Pub. L. 94-142 will necessitate a high level of cooperation and collaboration between vocational education and special education personnel at many levels.

THE REHABILITATION ACT OF 1973,
SECTIONS 503 AND 504 (PUB. L. 93-112)

Section 504 of the Rehabilitation Act prohibits discrimination of the handicapped in any public or private program or activity which receives federal assistance (direct grants, loans, or indirect support). This regulation requires agencies receiving federal assistance to do the following:

-
1. Provide opportunities, benefits, aids, or services for the handicapped equal to those provided the nonhandicapped even though these opportunities do not produce the identical result or level of achievement for handicapped and nonhandicapped persons.
 2. Provide aids, benefits, and services for the handicapped in the same setting as the nonhandicapped except in cases where their effectiveness is jeopardized by doing so.
 3. Provide barrier-free environments to insure program accessibility.
 4. Equally recruit, train, promote, and compensate the handicapped (Phelps, 1977).

Section 504 of the act places stringent demands on public schools and postsecondary institutions, but unlike Pub. L. 94-482 and 94-142 federal support for its implementation will be limited to assistance for renovation and remodeling of facilities. Furthermore, unlike the previously discussed legislation, compliance with Section 504 will be monitored by the Office of Civil Rights as well as by the secretary of Health, Education, and Welfare.

Compliance with Section 504, it is contemplated, will place a definite economic burden on many agencies, corporations and institutions. Because of this possible burden, the signing of the final regulations sparked much debate and was postponed for many months. This postponement, however, gave public leaders an opportunity to witness the growing determination of handicapped persons to actively pursue their personal rights and the rights of other handicapped persons. Thus, even though compliance with Section 504 and other regulations ensuring the rights of the handicapped will be monitored by various federal agencies, the most judicious monitoring of these regulations may very well come from the handicapped themselves.

Section 504 has a companion set of regulations, Section 503, which requires businesses having more than \$50,000 per year in federal contracts to initiate an affirmative action plan to recruit, train, and promote qualified handicapped persons. These regulations can and will greatly assist public schools in placing handicapped students. School personnel responsible for the placement of handicapped students on jobs should make a strong effort to cooperate with management personnel from industry who in turn are responsible for recruiting and hiring qualified handicapped workers. Together, leaders in education and industry should be able to identify the types of vocational education programs that are needed and ensure that handicapped students who complete prescribed training programs are placed in appropriate jobs.

As states gear up for the implementation of various laws and regulations which pertain to the education of the handicapped, there may be a certain amount of backlash if funding and federal direction for their implementation are not sufficient. It is evident, however, that there is a growing concern for the rights of the handicapped--a concern which in all probability will bring the recruitment, scheduling, teaching, and evaluation practices of vocational education personnel and their special education counterparts under the close scrutiny of advocates for the handicapped.

IDENTIFYING THE HANDICAPPED

The director of vocational education for a major metropolitan school district was invited to observe a vocational program for the handicapped within his district. At the conclusion of the visit, the vocational director made the following comment: "You know, these boys and girls do not even *look handicapped* to me." This director's comment, though not necessarily a reflection of his commitment to handicapped persons, was indicative of the stereotypes that are held by many educators. In all fields of education--including special education--administrators and teachers alike have focused more on the inabilities of the handicapped than on their abilities. The medical model--or the etiological perspective of the handicapped--has greatly prejudiced educators concerning the abilities of handicapped persons, especially those individuals who portray any of the characteristics of the various mental retardation syndromes.

It is important for vocational educators to recognize that there are many types of handicapping conditions and that, behaviorally speaking, the same range of human potential exists among the handicapped as among nonhandicapped persons. The U.S. Office of Education has specified nine handicapping conditions which are to be used in determining eligibility for assistance to which the handicapped are entitled. A brief explanation of the nine categories is given in Table 2 (based on Szoke, 1973), although it should be noted that these classifications are being revised by the Office of Education.

Table 2. U.S.O.E. Classifications of Handicapping Conditions

Handicapping Condition	Rationale for Classification
Mentally retarded	Individuals whose general intellectual development is significantly less than the normal rate and their potential for academic achievement is estimated to be less than that expected of persons with normal rates of intellectual development.
Learning disabled	Individuals who have a disorder in one or more basic psychological processes involved in understanding or using spoken or written language. These processes may be manifested in disorders of listening, talking, reading, writing, spelling, or simple computing. The term includes such conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, development asphasia.
Seriously emotionally disturbed	Individuals who manifest psychiatric disturbances which limit their ability to govern their own behavior. These disturbances are of such a nature and severity as to require one or more special educational services.
Orthopedically handicapped	Individuals who have limited self-mobility and ability to use materials and equipment because of muscular, skeletal, and neuro-muscular impairment.
Visually handicapped	Individuals who have very limited orientation (spatial adjustment) and self-mobility because of blindness or visual impairment.

Table 2--continued

Deaf and hard of hearing	Individuals who are unable to hear and understand speech (the deaf) or have very limited ability to hear and understand speech (the hard-of-hearing).
Speech impaired	Individuals who have speech patterns that differ noticeably from the normal. Disorders of speech include those which are articulatory, vocal, stuttering, delayed speech, and those resulting from cleft palate, hearing impairment, or cerebral palsy.
Other health impaired	Individuals who may have limited strength, vitality, and alertness because of chronic health problems such as heart conditions, tuberculosis, rheumatic fever, nephritis, asthma, hemophilia, epilepsy, diabetes, or other illnesses.

Frequently, special considerations are necessary to accommodate students who have handicaps. Many of these considerations are noted in an excellent series of publications prepared by the Wisconsin Vocational Studies Center, University of Wisconsin at Madison (1976). The series is entitled: *It's about time* (various handicapping conditions) *Came out into the open*. Another informative source about different handicapping conditions is the publication *Vocational Education for Students with Special Needs: A Teachers' Handbook*, edited by Myra Altfest, University of Colorado (1974). R. Weisberger (1977) at the American Institute for Research also has published a series of monographs on various handicapping conditions and the implications that these conditions have for vocational educators.

Some educators see little purpose in labeling persons with handicaps. Rather than perpetuate assumptions about the incompetence of the handicapped, they prefer to focus solely on the development of competence. For example, Dr. Marc Gold, a noted educator and psychologist, does not regard the special needs of handicapped persons in

the light of traditional definitions and characterizations. According to Gold, a meaningful definition of "normal" or "handicapped" requires recognition of the complex interaction between a person's competence and his deviance. Gold (1975) has hypothesized that "the more competence an individual has, the more deviance will be tolerated in him by others" (p.1). Except in a broad sense, Gold does not prejudge the approach to be used in training handicapped individuals by their classification but "by the level of power needed in the training processes required for them to learn" (p.4). The "power" he refers to is "the amount of intervention, assistance and direction required by the teacher in order for the learner to reach criterion" (p.3). Individually demonstrated behavior--not broad generalities about human characteristics--is fast becoming the criterion by which the handicapped are regarded. And there are indications that in the future this trend will continue to greatly influence the manner in which they are educated.

DEVELOPING APPROPRIATE PROGRAM ALTERNATIVES FOR SERVING THE HANDICAPPED

Developing effective program alternatives for the handicapped requires much planning at several levels. State guidelines are needed which will accommodate the originality of local program planners and, at the same time, account for the constraints which local leaders face in making programs operational. Phelps and Halloran (1976b), the developers of a self-assessment guide for state agency leaders, contend "many of the keys to providing appropriate educational opportunities and services lie within state education agency (SEA) policies. The challenge. . .confronting the SEA is one of interpreting state and federal regulations, and through a coordinate effort, transform regulations into relevant, viable, and exciting local programs" (p.2).

To provide examples of effective programming for state and local program developers, several documents have been prepared which describe exemplary programs and procedures for serving the handicapped. Among the publications prepared to assist leaders in the development and evaluation of exemplary programs for the handicapped are those listed in Table 3.

Table 3. Publications Which Describe Exemplary Vocational Programs for the Handicapped

Date of Publication	Title	Sponsor(s) of Publication
1969	<i>Vocational Education for Handicapped Persons: Handbook for Program Implementation</i>	USOE/BOAE
1971	<i>A National Study to Identify Outstanding Programs in Vocational Education for Handicapped and Disadvantaged Students</i>	NASDVE ¹
1973	<i>Exemplary Programs for the Handicapped Volume II: Career Education Case Studies</i>	USOE/BEH
1973	<i>Selected Career Education Programs for the Handicapped</i>	USOE/BEH
1974	<i>An Assessment of Vocational Education: Programs for the Handicapped Under Part B of the 1968 Amendments to the Vocational Education Act</i>	USOE
1974	<i>Career Education: Exemplary Programs for the Handicapped</i>	USOE/CEC ²
1975	<i>Improving Occupational Programs for the Handicapped</i>	USOE/BEH
1976	<i>Successful Vocational Special Needs Programs</i>	NAVESNP ³

¹ National Association of State Directors of Vocational Education

² Council for Exceptional Children

³ National Association of Vocational Education Special Needs Personnel

If the dissemination of information about exemplary programs has had an effect on the field, the effect has been to spawn the development of additional exemplary programs where 'exemplary' conditions exist. Unfortunately, only limited information is available to document the impact which exemplary programs have had on neighboring programs which themselves have been inadequate and ineffective.

Other national efforts to improve vocational programming for the handicapped include a series of regional curriculum development conferences for teachers and administrators of special needs programs (Link Enterprises, 1973) and a national effort to identify instructional and teacher training materials for the handicapped (Towne and Wallace, 1973). These projects for the most part had limited impact, however, because they did not involve enough persons at the level where policies and programs are generated. In fact, only in recent months has a major national project been funded which addresses the critical issue of program development and administration in a comprehensive way.

In 1976, the Council on Exceptional Children was awarded a grant to develop comprehensive administrative guidelines which can be used as the basis for the development of vocational programs for the handicapped (Lampe, 1976). Through policy research, the project will identify administrative guidelines for organizing and operating quality vocational programs for the handicapped. It is too early to assess the impact of the CEC project on future program development. This much is known, however, that in places where key administrators have focused their attention on the need for appropriate programs for the handicapped, comprehensive and effective programs have been developed.

In Michigan, state leaders in special education and vocational education have cooperatively developed several program options for serving the handicapped. The vocational program alternatives developed by Michigan's state agency are described in Table 4 (Michigan Department of Education, n.d.).

Table 4. Vocational Alternatives Available for the Handicapped in Michigan

Type of Program	Description
Regular Education	Regular vocational education or general high school programs are used for all handicapped students who can benefit from placement. All students receiving noninstructional special education services (speech, social work, occupational therapy, special materials like talking books, etc.) are placed in these programs.
Adapted vocational education	Regular vocational programs are altered to accommodate special education eligible students who could not otherwise be placed in the program. Special materials and instructional aids are examples of adapting the program. This alternative may be needed for handicapped persons assigned to teacher consultants or special education resource rooms who need adapted instruction.
Special vocational education	Training is usually of a semiskilled nature (such as custodial training, nurses' aides) or introductory skills training (electronics, auto mechanics, secretarial) designed to provide prerequisite skills for entry into a regular vocational education sequence or to provide entry level job skills. It is designed for handicapped persons whose disability precludes integration into a regular vocational education program. It is usually limited to handicapped students assigned to self-contained special education programs.
Individual vocational training	Training in special programs (such as, M.D.T.A., apprenticeship training) approved by a governmental agency, or a unique individual training program designed to fit a handicapped student's

Table 4--(continued)

Type of Program	Description
	special interests and not generally available in the geographic area (outboard motor repair, tailoring, inhalation therapy). This program may be used for any special training needs. Community training stations may be used so long as students do not become employees and are not paid a wage.
Prevocational evaluation services	Designed for students whose disability precludes the use of the regular education sequence for obtaining vocational assessment. The service is provided in a sheltered workshop authorized by the U. S. Department of Labor to provide this service. Placement is limited to six months by U. S. Department of Labor rules. This is a diagnostic service and not an instructional program.
Work activity center services	Designed exclusively to provide work therapy for impaired persons whose handicaps are so severe as to make their productivity capacity inconsequential. The program must be licensed as a sheltered workshop by the U. S. Department of Labor.
Work study services for students who have not had vocational education	Available to any special education student who is within one year of termination due to age, or has notified the school of plans to drop out. Students must be employed and paid a legal wage.
Appropriate vocational programs for the handicapped are those which have several placement options available and which take into consideration the special needs of the individuals to be placed. Some of the options which should be considered for inclusion in a comprehensive program for the handicapped are discussed in the following segments of the paper.	

REGULAR VOCATIONAL CLASSES

Placement of handicapped students in regular vocational classes has met with considerable resistance in some schools; but in others, integration of the handicapped (mainstreaming) has been frequent and highly successful. Where integration of the handicapped has succeeded, it largely has been a matter of cooperative efforts and positive attitudes on the part of the teaching, support, and administrative personnel. In the future, much more emphasis will be placed on mainstreaming because of federal requirements (Pub. L. 94-142; Pub. L. 93-112, Section 504) to educate handicapped students in the least restrictive setting. It has been found that successful mainstreaming of the handicapped must be approached with careful consideration of the abilities of students and the receptiveness of regular class teachers (Nystrom and McClellan, 1976).

For many handicapped students, mainstreaming is long past due. Some special vocational programs have perpetuated their existence by filling enrollment quotas with handicapped students whose level of performance does not warrant placement in a special class setting. In like manner, some schools purportedly have been serving the handicapped in regular vocational classes when, in fact, they have made no special accommodations for the students. It is important to note that students with disabilities are not considered "handicapped" when placed in regular classes unless special and related services must be provided to enable them to succeed in the regular program.

It is interesting to note that vocational schools which have been the most receptive to the idea of mainstreaming are those which provide comprehensive prevocational training experiences for the handicapped. It is said that providing hands-on exploratory activities in a number of vocational clusters significantly improves the identification of students who have the potential for succeeding in regular programs. In addition, vocational teachers are more confident about accepting handicapped students into their programs when they know something about the performance of these students in related prevocational tasks. Likewise, the anxiety of handicapped students toward placement in regular vocational programs often is significantly reduced when they have been previously made aware of the tools, equipment, and concepts associated with a particular vocational area.

For mainstreaming to be successful, it must be a cooperative effort (Riggers, 1975; Mattera, 1974). Special education teachers will have the important role of preparing handicapped students to step out from the sheltered environment of the special classroom into the less protective environment of the regular classroom. School administrators, on the other hand, will have the equally important role of identifying regular classroom teachers who are sensitive to the needs of handicapped persons, yet, at the same time, are sufficiently demanding to enable them to realize what they can do on their own. Mainstreaming

in which there is a high level of cooperation between teachers of various disciplines can be and often has been a highly successful experience for teachers as well as for handicapped students (Beery, 1975). It must be pointed out, however, that the outcomes of mainstreaming in some districts have been very negative. There are districts, for example, where handicapped boys and girls have simply been pulled out of special classes and "dumped" back into regular classrooms without any preparation of the students or the teachers involved.

Information on mainstreaming handicapped persons in vocational education programs may be obtained from the American Institute for Research (Palo Alto, California) which was awarded a grant from the Bureau of Adult and Occupational Education (USOE) to prepare a training program on ways to mainstream students with visual, communication, orthopedic, and mental handicaps into regular vocational programs (Weisgerber, 1977). Several other projects have been funded to provide vocational educators information on mainstreaming. Evans and Albright (1976) have received a USOE grant to develop a conceptual model for the identifying and assessing mainstreamed special needs learners. The results of this project will be available in February of 1978. The Office of Education also has funded the University of Florida at Gainesville to develop self-instructional materials for changing attitudes of vocational educators toward mainstreaming the handicapped (Fowler, 1976). Hull and Clark (1977) at Texas A&M University have a USOE-sponsored project to identify access strategies for the handicapped in vocational education. The outcomes of these and related projects should significantly increase and refine the body of knowledge that deals with mainstreaming the handicapped in vocational education.

One of the most successful approaches to accommodating the handicapped in vocational education has been the use of an *open entry/open exit model*. The use of this approach allows students to enroll in courses for limited or extended periods of time depending on their ability to achieve the objectives that are to be covered at a given time. However, it is essential in this mainstreaming approach to assure students that entering or exiting a program other than during the normal enrollment periods is not to be construed as failure on the part of the student. One disadvantage to this approach to mainstreaming is the complication it creates in terms of scheduling. Even so, arrangements can often be made for handicapped students to participate in courses at least on a quarterly basis.

For the *open entry/open exit model* to operate effectively, it may be necessary for a given number of slots in certain courses to be set aside for handicapped students. Although not a regular practice, setting aside a proportionate number of slots is one way of showing that efforts have been made to comply with federal mandates to educate the handicapped persons in the least restrictive environment and to provide them with equal educational opportunities. To accommodate the handicapped in regular vocational programs, modification of such things as staffing materials, curriculum, and instruction may be necessary (Illinois State Board of Vocational Education, 1974;

Kumar, 1977). This does not imply, however, that program standards must be ignored. Program standards which are in keeping with the expectations of employers for on-the-job performance are always in order.

Curriculum modification to accommodate the handicapped sometimes has been accomplished by eliminating nonessential areas of instruction in order to concentrate on those that are essential for employment. Some programs have accommodated the handicapped by identifying multiple exit points in a curriculum. These exit points may fall short of a full course of instruction but will entail sufficient skills and concepts to enable students to enter the occupation for which they have received instruction. The object is to help each student find an entry level at an appropriate point on a career ladder. A case in point would be the student who enrolls in an automotive repair course and learns only such skills as tire changing and repair, installation of shocks and mufflers, and basic tune-up skills. Performance objectives for the program may include engine diagnosis and systems analysis as well as the skills previously mentioned. Curriculum modification in this case would consist of the elimination of certain complex skills in order to concentrate on the minimum, essential skills that can lead to employment in the automotive industry.

Accommodating the handicapped in regular classes may necessitate the modification of instructional materials. The modification of instructional materials can be very time consuming, and for this reason should be a carefully planned effort. When a course of study requires the independent study of written material, it may be necessary for the teacher(or aide) to audio-tape the content covered in written form, either verbatim or in simplified form. For students who are not effective oral learners, it may be necessary to prepare written outlines of course information which is presented orally. In some instances, special materials like captioned films or talking books may be needed in order to accommodate the handicapped in regular classes. Information about the availability of special materials of this nature may be obtained from the American Printing House for the Blind, 1839 Frankfort Ave., Louisville, Kentucky 40206 or from the National Center on Media and Materials for the Education of the Handicapped, The Ohio State University, Columbus, Ohio 43210.

In certain vocational subject areas, teachers frequently encounter students who are poor readers. These teachers, therefore, have had to devise some unique ways to compensate for the inability or limited ability of students to read. Excellent examples of vocational instructional materials which have been developed for persons with limited reading ability are available from the Career Related Instruction project at the Capitol Area Career Center, Mason, Michigan. (Sullivan, and Sharpe, 1976)

Some vocational teachers and some courses, irrespective of the course instructor, require students to read technical information. When technical terms are required, the use of vocabulary cards and other vocabulary building techniques can assist students to recognize and

comprehend unfamiliar terms. Gold (1974) and Hull (1976) have observed that retarded students, who frequently are marginal readers, are able to benefit from instruction that includes a fairly high level of technical terminology. It is the clarity of the instructional context in which technical terms are presented that appears to determine the extent to which students comprehend these terms and information.

Modifications in instructional delivery in all probability will be minimal for teachers who consistently use good teaching techniques, such as the following:

- Getting and maintaining the attention of their students
- Presenting information in a clear, deliberate manner at a pace geared to the receptivity of all students
- Asking frequent review questions
- Repeating information
- Keying in on students who appear not to be comprehending what is going on (for whatever reason).

When supplemental instruction is needed in order to accommodate handicapped students in regular class settings, an aide or peer tutor frequently can provide this instruction or else they can "cover" the class while the teacher instructs the ones who need additional help. Vocational leaders in Minnesota, for example, use a portion of their vocational set-aside monies to provide technical tutors (persons qualified to give supplemental instruction in an occupational area) and nontechnical tutors (persons who provide assistance in academic areas) for students with special learning needs (Birkland, 1977). Although this program presently operates predominantly at the post-secondary level, its success in helping handicapped students to succeed in regular programs suggests that the use of tutors should be considered at the secondary level as well. Michigan has used federal set-aside funds to train and employ vocationally-certified paraprofessionals to assist vocational instructors at the secondary level.

It is clear that more handicapped students must be included in regular programs now that Section 504 and Pub. L. 94-142 require school districts to educate each handicapped child in the least restrictive setting. More research is needed to identify ways to successfully accommodate the handicapped in regular classes and, at the same time, to improve the educational achievements of nonhandicapped students. Teachers will need to clearly communicate to their administrators the problems encountered in mainstreaming. And administrators, in turn, will need to provide

the supportive services that will make mainstreaming successful for the handicapped, the nonhandicapped, and for teachers.

SPECIAL VOCATIONAL CLASSES

Probably more vocational skills training has been provided for the handicapped in special, segregated, vocational classes than in any other setting (Clark, 1976). Much of this training could have been provided in integrated settings, but for various reasons vocational leaders have interpreted federal legislation in a way that has fostered the operation of segregated vocational classes.

Advantages of the special class setting include smaller classes, more individualization, greater flexibility in selecting course content, and less stress for the students. Disadvantages of the special class arrangement include the isolation of the handicapped from their peers, the failure to sufficiently challenge students, the proliferation of projects and activities of little occupational significance, and the tendency to make students over-dependent on teacher assistance. Despite these disadvantages, special vocational classes will continue to be important as persons with greater severity of handicaps are served by vocational education.

The special vocational class, when offered as one of several training alternatives, can provide a much needed program of vocational skills building for both lower and upper division students. Many vocational schools provide prevocational (or vocational) skills training for the handicapped at the ninth or tenth grade level and either actively encourage or reluctantly permit these students to integrate into regular vocational programs at the eleventh and twelfth grade. For example, Vermont's Diversified Occupations (D.O.) programs (special vocational education classes for the mentally handicapped) provide exploratory experiences in a variety of occupational clusters at the ninth grade level, and at the tenth grade level, provide training intended to prepare students for participation in regular programs. For the past five years, approximately 50 percent of the students who have completed D. O. programs have been able to succeed in regular vocational programs. For those who cannot complete a regular program following the special prevocational program, work-study placements are arranged for further employment preparation (Hull & Halloran, 1974).

Reading about and visiting segregated programs point out several things. First, the most effective programs from the perspective of the students served are those which provide numerous options for exit into other vocational training programs (especially regular programs). "Dead sea" programs--ones from which there is no release following intake--maybe convenient to operate from an administrative standpoint

and, on the surface, may appear to be appropriate for handicapped persons. But, all too often, these programs do not challenge students sufficiently because of the limited scope of training that place in them (or because the students are inappropriately placed). Furthermore special programs often do not operate in the best interest of the student. It is most unfortunate for a handicapped student to be forced to enroll in a horticulture program, for example, simply because it is the only vocational training provided for students with handicaps at a particular campus or because failure to enroll the student in the program would result in the unit allocation being dropped.

Special vocational classes have been used frequently to provide training for the deaf and the blind. Although more hearing impaired and visually impaired students are being admitted into regular vocational classes (Davidson, 1975), the need for special vocational classes for the sensorially impaired will continue. For information concerning the vocational preparation of the visually impaired, see Link, 1975; Wachter, 1976; and Uxer, 1973. Concerning the deaf, see Smith, 1974; Moores et al., 1974; and Clarco and Maruggi, 1975.

From reviewing various program alternatives, it is readily apparent that the best special programs for the handicapped are those which most closely resemble outstanding, non-segregated programs that include the following criteria:

- Students follow a demanding but flexible curriculum
- Performance standards are clearly stated
- Teacher expectations are high
- Discipline and a concern for safety are stressed
- Complex tasks are performed
- A well-structured organization prevails

WORK-STUDY AND ON-THE-JOB TRAINING PROGRAMS

In the 1950's and 60's the work-study approach was the primary option available for preparing the handicapped for employment. Initially, work-study programs for the handicapped frequently were a cooperative effort between vocational rehabilitation and special education. This arrangement enabled many rehabilitation agencies to receive substantial amounts of federal funding and helped special education divisions to "hold" students who were enrolled in secondary programs (Malouf & Halpern, 1976).

Even though increased numbers of vocational education programs have been made available for the handicapped, work-study programs have

continued to predominate in many regions and may continue to do so. There are those who contend that work-study programs are more beneficial for the handicapped than are laboratory-oriented programs of vocational skills training. Advocates of the work-study approach (like advocates of cooperative vocational programs) argue that students benefit in greater measure from work-study programs because, in addition to learning specific job skills, they also learn important general employability skills--pride in work, productivity, dependability, employer/employee relationships, and so forth (Eddy, 1977). Others in the field contend that, despite their popularity, work-study programs too often fall short of the ideal training situation for the handicapped (Anttonen, 1974). This is because placements frequently have been made in jobs in which the training given (if any) does not transfer to jobs that are worth having, that is, jobs that are relatively stable and economically sufficient.

Although leaders in vocational education have placed a lot of emphasis on developing cooperative programs for nonhandicapped students, handicapped students have not been actively recruited for these programs. The number of handicapped students enrolled in Distributive Education, for example, is far below 10 percent, the overall percentage of students considered handicapped. Like labor unions, vocational co-op programs have largely avoided the opportunity to serve the handicapped through on-the-job training arrangements. However, the success that many handicapped students have achieved in special work-study programs suggests that greater numbers of these students could successfully participate in regular cooperative programs.

Selecting appropriate work-study sites for the handicapped calls for a great deal of insight on the part of the site selector. Some students have sufficient maturity to warrant placement in situations where they will receive meaningful on-the-job training and where there is a good prospect of permanent employment. Other students, for various reasons, will be high risk placements and should be placed in job sites where the turnover is normally high or where the employer fully understands the risk of employing individuals with special needs.

Some work-study coordinators have developed outstanding long-term arrangements with local industries for the placement of handicapped students. In most instances, these placements have involved in-depth on-the-job training (Eddy, 1977). For the conscientious and capable student, the amount of specific job training received through the work-study arrangement is the key to the success of the program. Some parents have objected to the work-study arrangement because their children have not received sufficient skills training. The mother of a mildly handicapped child who was participating in a work-study program expressed her concern in this way: "I want my daughter to have

a trade not just a job. If she wants a job, she can find one for herself. The school should teach her a trade. . . ."

When actively sought after, work-study sites can be located where students will receive timely and marketable skills training--hence a legitimate and effective vocational education (Dyer and Ford, 1976). With the advent of Sections 503 and 504 of the Rehabilitation Act, cooperative efforts to place the handicapped in appropriate jobs should occur with greater frequency. Coordination of work-study placements with rehabilitation agencies and employment security commissions should have the added bonus of continuation of agency services following the exit of students from public education programs.

INDIVIDUALIZED VOCATIONAL TRAINING

Occasionally handicapped students will require one-on-one instruction in order to acquire vocational skills. When instruction of this nature becomes necessary, vocational rehabilitation (VR) can play an important role. Vocational rehabilitation may be able to cover the cost of the training and may also be able to provide valuable technical assistance such as referrals to training centers and in-depth vocational appraisals.

Much vocational training that is provided on an individual basis will be short term in nature. However, for students with severe physical handicaps (total blindness, deafness, or immobility), long term individualized training may be required. In these cases, numerous agencies may be involved in providing client services. It is important in such cases for the local school district to coordinate services so that they are provided regularly and are of maximum benefit to the student. It is also important that arrangements be made so that essential services are not interrupted at the time the student exits from high school. In this regard, vocational counselors will often be the ones to provide individual assistance when it is needed.

PREVOCATIONAL EDUCATION FOR THE HANDICAPPED

Experienced teachers of the handicapped are quick to acclaim the importance of prevocational experiences for the handicapped (Wargo, 1976; Jernberg, 1975). Some handicapped students are very unsure of themselves in new and unfamiliar settings and must be introduced gradually to strange surroundings. Prevocational experiences make it possible to identify students who are unable to cope with certain environments, such as those which entail the noise and danger of power machinery. In this way, if a student decides that working with dangerous equipment is not to his or

her liking, he or she can be guided into a different type of vocational preparation without having to quit or fail a regular vocational program.

When prevocational programs are being planned, experiences should be selected which expose students to a wide variety of work processes and environments. Units in woodworking and metalworking, for example, are closely related. Each field involves measuring, cutting items to specified lengths, shaping, sanding (deburring), fastening, and finishing. Wood or metalworking and landscape gardening, on the other hand, are much more diverse. One requires much fine motor activity, the other gross motor activity; one focuses predominantly on inside activity, the other on outside activity; and one involves working with inanimate things, the other with living things. Thus, in terms of information gathered for and about a student, participation in a combination of unrelated areas such as woodworking and landscape gardening would provide more information than participation in related units alone could provide. When the number of prevocational activities that can be offered is limited, it is beneficial to select activities that are as diverse in order to assess as many interests and aptitudes as possible. In Table 5, a variety of related prevocational activities are listed horizontally and unrelated activities are listed vertically. If a limited number of units could be offered, a vertical selection of units would furnish a greater depth of exploratory experiences than would selections of multiple units from any one cluster. For many handicapped students, the range of clusters and units depicted here would include new and emerging occupations, computer sciences, energy-related technology, electronics, distribution, and all fields open to nonhandicapped persons.

Prevocational activities often are centered around the completion of individual or group projects. Although projects are an excellent motivation for learning, they should not be used to the extent that important skills and concepts are not introduced. Prevocational experiences should expose students to a maximum number of career options as well as concepts, terms, equipment, work processes, and supplies associated with particular occupational areas.

Table 5. Possible Prevocational Experiences for the Handicapped

Cluster		Units of Exploration		
Manufacturing	Woodworking	Metalworking	Plastics	Welding or Carpentry
Automotive and power services	Small engine repair	Appliance repair	Auto mechanics	
Agribusiness occupations	Horticulture	Landscape gardening	Grounds keeping	
Building services	Building mainten- ance	Custodial training	Innskeeping	
Office occupations	Drafting	Office duplication	Filing	Typing
Food preparation and home- making	Food prepar- ation	Clothing construc- tion	Waiter/ Waitressing	
Personal services	Health care	Home care	Child care	

Prevocational activities often are centered around the completion of individual or group projects. Although projects are an excellent motivation for learning, they should not be used to the extent that important skills and concepts are not introduced. Prevocational experiences should expose students to a maximum number of career options as well as concepts, terms, equipment, work processes, and supplies associated with particular occupational areas.

ROLE OF VOCATIONAL EDUCATION IN COMPREHENSIVE SECONDARY PROGRAMMING FOR THE ACADEMICALLY HANDICAPPED

In the past, much debate has occurred over the issue of what is the most appropriate instructional content and setting for academically handicapped adolescents (Clark, 1975). One group argues that the

instructional content for the handicapped should consist primarily of concepts which prepare an individual for adulthood, or as they say, to cope with persisting life situations. Many individuals of this persuasion have rallied around the career education concept. Brolin, drawing on the career education theme as interpreted by Clark, Hungerford, Kokaska, and other experts in the field, identified twenty-two competencies on which he based a comprehensive secondary curriculum for mentally handicapped adolescents (Brolin & Thomas, 1972). A comparison of Brolin's proposed curriculum with the Wisconsin persisting life experiences curriculum (1970) or the life preparation curriculum developed by Stratemeyer and associates at Teachers College, Columbia University (1957) shows a great deal of similarity in content and virtually identical goals: the training of adult functional competency.

On the other side of the curriculum debate are the individuals who contend that the standard school curriculum should be pursued by all students (with the exception of the severely retarded). Rather than develop special curricula for the handicapped, these individuals argue that time and resources should be spent on developing ways to maintain the handicapped in regular classes and curricula. These individuals concentrate on providing students with supplemental assistance--tutors, consulting teachers, or helping teachers--in regular classroom settings. Their most successful strategy has been to encourage regular class teachers to develop individual education plans for all students and to adopt criterion-referenced rather than norm-referenced standards for evaluating students and for prescribing instructional activities.

At the elementary and middle school levels, handicapped students have been successfully maintained in regular classes through the application of remedial, tutorial, and diagnostic-prescriptive learning techniques. At the junior and senior high level, however, the performance gap among students develops rapidly. Thus, it is at this grade level that some educators begin to argue that students whose academic functioning has leveled off several grade levels below that of their peers should have a curriculum which focuses primarily on the acquisition of everyday life skills rather than traditional academic competencies, or the 3 R's.

Most likely, the debate concerning the proper placement and curriculum for the academically handicapped will continue with compromises and concessions made on both sides of the issue. The important thing for vocational educators to consider is this: regardless of what curriculum handicapped students have followed or the setting in which they have received instruction, their need for vocational training remains the same. And the fact that certain students have failed to make grade level achievements in an academic curriculum in no way indicates an inability to complete a regular vocational program. A secondary curriculum for the handicapped is incomplete for most handicapped persons without the inclusion of a significant amount of specific vocational skills training, irrespective of how or where the training is obtained.

THE NEED FOR COOPERATION

Preparing the handicapped for suitable employment is best accomplished with a high level of interagency cooperation between such agencies as the state rehabilitation commission, state education agency, employment security commission, mental health, CETA programs and prime sponsors, community services agencies, and so forth. Establishing and maintaining beneficial interactions between agencies, however, can be very time-consuming. Thus, there should be a reasonable expectation that the time invested in cooperative efforts among agencies will result in specific benefits, both to the individuals served and to the agencies themselves.

Although there are numerous agencies which serve the handicapped, our system of federalism and the nature of congressional funding has resulted in a very fragmented delivery of human services. The failure to coordinate programs results in several problems destructive to a client's interests. Among the problems are poorly conceived referrals, the provision of duplicative or incompatible services to the same client, the fragmentation of services which should be closely related, and the over-taxing of a client's time and determination (Benson, Kunce, Thompson, & Allen, 1973). Furthermore, the lack of articulation between agencies often causes the handicapped who are in need of multiple programs and services to become lost in the shuttle between agencies, if not the shuffle within them.

Since 1963, vocational education departments at the state level have been required to develop cooperative agreements with special education and vocational rehabilitation. These agreements, though put into writing, have been difficult to implement. Where cooperation has occurred, it has tended to be among pairs of agencies. Where vocational rehabilitation and special education have worked closely to set up on-the-job training and cooperative work-study programs, vocational education has often assumed a limited participatory role, saying that vocational education would do its part on its own. In some states, vocational rehabilitation has been a noncooperative agency and has neglected or refused opportunities to make interagency referrals, to provide information about services, share client information (in keeping with the Privacy Act), collaborate in the formation of programs, and so forth.

Congress now requires the annual program plans of vocational education and special education to reflect cooperative planning of programs and services. In effect, this means that interagency cooperation has been legislated, hopefully with better results than previous attempts to bring these agencies into cooperative relationships.

For meaningful interagency cooperation to occur, it must be planned. In this regard, Michigan serves as an excellent model and provides for the following:

- An interagency supervisory level committee which jointly identifies needs, establishes priorities, explores alternatives, and minimizes overlap and duplication of services to the handicapped.
- A continuous review and updating of specific goals and objectives of each agency's legal and philosophical commitments to ensure effective and productive delivery of services to the handicapped.
- A continuous sharing of ideas, problems, and conflicts from the local level between field staff and administrative staff of the interagency cooperation committee to allow for new and innovative programming and smooth delivery of services to youth at the local level.

In addition, the Michigan model clearly defines the cooperative role that each agency will play in the overall delivery of vocational services. Agreeing on the role to be played by each agency appears to be the key to successful cooperative efforts. For persons wanting a closer look at the Michigan model, it may be obtained from the Michigan Department of Education under the title: *Michigan Interagency Model and Delivery System of Vocational Education Services for the Handicapped*.

A major barrier to interagency cooperative ventures has been the reluctance to jointly fund programs and projects. It should be emphasized, however, that certain state agencies have found ways to channel monies into singular programs without commingling funds. The Vermont Diversified Occupations program, a statewide secondary special education/vocational education program for the handicapped, is an excellent example of a cooperatively planned, funded, and operated program which operates as a singular, comprehensive educational program. The cost of equipment and supplies, salaries for the vocational instructors, and the construction of facilities are reimbursed in part by monies from vocational education. Utilities and maintenance costs, instructional materials and supplies, travel for home visits, and the salaries of academic teachers are paid in part by special education funds. Vocational rehabilitation, on the other hand, contributes in part to the cost of special prosthetic devices, vocational evaluations, or placement in special training centers. It should be noted that this funding arrangement is worked out at the state level by the agencies involved rather than pieced together by local program administrators.

Interagency cooperation at all levels is essential. At the federal level, the Bureau of Education for the Handicapped and the Bureau of Occupational

and Adult Education are beginning to interact in more than a token fashion. Cooperative efforts also have been planned between various state, regional, and national professional groups concerned with the employment and employment preparation of the handicapped. However, the cooperative efforts of greatest consequence remain the efforts that are made at the local level.

CURRICULUM AND INSTRUCTIONAL MATERIALS TO ASSIST IN THE VOCATIONAL TRAINING OF THE HANDICAPPED.

In the future few vocational programs for the handicapped should be wanting for instructional materials. In recent years, the market has literally exploded with materials and resources for teaching career and vocational education concepts to the handicapped and disadvantaged. Furthermore, thousands of dollars of federal monies have been channeled into information retrieval and dissemination systems and centers in special education, vocational education, and vocational rehabilitation. Numerous projects have been funded to individualize vocational materials (Brauner, 1976) or to adapt them for the use of students whose reading ability is very limited.

It would be impossible to describe (within the scope of this paper) the vast number of programs and projects that are involved in some way in developing materials for the handicapped. About the best that can be done is to identify the most comprehensive bibliographies of instructional materials and the various networks that have been established to channel the flow of materials to the proper recipients. Special education, vocational education, and vocational rehabilitation each have established systems for disseminating information about the handicapped with most of the information dealing with student and teacher materials. Some of the major resource systems are described briefly in Appendix A. Several bibliographies of resource materials are listed in Appendix B.

When bibliographies of materials are inadequate or incomplete, computer searches of noncommercial materials and literature can be conducted. Many of the information networks described previously have the capability of conducting searches as do most colleges and universities. There definitely is no scarcity of information and materials to assist in the instruction of the handicapped. The problem now is one of learning how to identify, retrieve, and evaluate the materials that are appropriate for the needs of the moment--which itself is no small task.

PERSONNEL PREPARATION

To accommodate the handicapped in vocational education, there must be an adequate supply of teachers who are trained to work with the handicapped, as well as an adequate supply of administrators and support staff who are aware of and sensitive to the needs of handicapped persons. Unfortunately, most colleges and universities, unless given monetary incentives, have lagged far behind in developing programs to meet the demand for vocational education special needs personnel (Clark & Evans, 1976). Consequently, there presently is a shortage of personnel who are prepared to work with the handicapped in vocational education.

Several attempts have been made to identify the competencies needed to effectively teach the handicapped in vocational education settings (see Kruppa, Hirtz, & Thrower, 1973; Bitter, 1971; Brolin & Thomas, 1972; Bullock & Whelon, 1971; Clark & Oliverson, 1973; Albright, Nichols, & Pinchak, 1975; Nielson, Johnson, & Frank, 1975). Although competencies have been identified through various efforts, there is little implication that numerous special courses must be designed to facilitate the acquisition of these competencies. A sequence of two or three special emphasis courses (Brock, 1977) would appear sufficient to insure that vocational teachers can successfully work with the handicapped, provided that special needs concepts are infused into existing vocational education and special education courses.

The infusion of vocational special needs concepts into vocational education and special education courses requires a significant amount of cooperative planning and in many institutions it may require considerable inservice of faculty members and key administrators. An infusion approach has been accomplished at a number of colleges and universities; thus there is neither a lack of precedence nor a scarcity of models for these types of cooperative efforts. The most successful approaches to the infusion of vocational special needs concepts into vocational education and special education courses are:

- Team teaching
- Guest lectures
- The use of modules
- Requiring students to enroll in courses in both areas
- The development of interdisciplinary courses

These approaches are described by Brock (1977), Phelps et al. (1976), and others.

Personnel preparation grants for establishing preservice programs and inservice projects are available annually from the Bureau of Education for

the Handicapped (HEW). Abstracts of previously funded programs and projects may be obtained from BEH through the Division of Personnel Preparation. Because the bureau has designated career/vocational education as one of eleven priority areas for personnel training, it is anticipated that these funds will be available for the next several years.

The Bureau of Occupational and Adult Education also provides professional development monies for projects in vocational education for the handicapped. BOAE funds, unlike BEH funds, are earmarked primarily for short-term projects (twelve to fifteen months duration) and go on a competitive basis to projects which address specific needs of state or national significance.

A series of national workshops have been sponsored by BOAE to acquaint teams of college and university personnel with strategies for preparing vocational and special education personnel to cooperatively program for the handicapped. A similar national workshop was sponsored by BEH for the large number of institutions which had applied but could not be served through the BOAE-sponsored workshops. These workshops represented a positive step toward cooperative planning among vocational education and special education entities. The national projects which have brought together college and university personnel from departments of special education and vocational education hopefully will upgrade preservice and inservice personnel preparation efforts. Useful materials for persons interested in special needs personnel preparation are listed in Appendix C.

The efficacy and impact of future personnel preparation activities will depend largely on the extent to which special education and vocational education personnel at the local level cooperate with college and university personnel and state education agency personnel in defining and addressing professional development needs. In the future, local school districts will have more funds for professional development activities, but it is highly unlikely that training of lasting consequence will take place unless teacher trainers in all agencies work in close cooperation.

EVALUATION OF STUDENTS AND PROGRAMS

Program evaluation and student assessment have become very sophisticated fields in their own right. This may not be evident from day to day observations of evaluation activities at the local district level, but it is vividly reflected in the literature. Evaluation devices ranging from simple observational checklists to multivariate, computerized matrices

are now available for assessing the interests, aptitudes, and achievements of students and the cost effectiveness, administrative efficiency, and long-term impact of educational programs. Educational evaluation is becoming so complex that many school districts are turning over their evaluation activities to specially trained personnel, such as full-time student appraisal personnel and program planning and evaluation specialists. Some school districts are using educational diagnosticians and student appraisal personnel to write educational plans for students whom they never see in the classroom. Thus, in the long run, the sophistication of evaluation procedures and activities--devised to achieve accountability--may work to the detriment of students. At the moment, however, the trend in educational evaluation is toward greater sophistication.

Two areas of evaluation, student and program evaluation, are discussed briefly in the following paragraphs.

PROGRAM EVALUATION

In general, the program evaluation which takes place at the local district level can best be characterized as formal and systematic or informal and unsystematic. All districts operating state supported programs must conduct periodical program reviews utilizing state guidelines. As the time for a review approaches, program evaluation invariably becomes formal and systematic. Following the formal review period, however, evaluation activity often reverts in an acquiescent manner to minimal audit activity. Of course, to be of any benefit, program evaluation must be on-going in nature and thoroughly planned.

Several guidelines have been developed to assist in the evaluating of vocational programs for the handicapped. Meyer (1972) developed a *Self-Evaluation Guide for Local Districts for Vocational Education of Handicapped Students* (available from the Research Coordinating Unit of the Texas Education Agency). The report includes guidelines for evaluating such items as:

- Student selection and referral
- Course content
- Instructional methodology
- Pupil outcomes
- Personnel
- Interfacing with special education
- Parental involvement
- Facilities
- Organizational structure

Another excellent guide for evaluating vocational programs for the handicapped was prepared by Bekker and Christiansen (1975) under the title, *A Model for Evaluating Programs in Vocational Education for the Handicapped*.

A comprehensive text which addresses both program evaluation and student assessment with respect to the handicapped and nonhandicapped is *Evaluating Occupational Education and Training Programs* (Wentling and Lawson, 1976).

STUDENT EVALUATION

Like program evaluation, student evaluation is a field of study in itself. Day-to-day monitoring of student progress, assessment of interests and aptitudes, observations of classroom behavior and interaction, and achievement testing are but a few of the areas to be considered in student evaluation. To accomplish even a portion of the evaluation activities that should at some point be carried out, one must have a comprehensive evaluation plan.

An excellent evaluation plan developed specifically for students at the secondary level is discussed in *The Secondary Resource Specialist in California: Promising Practices* (Carroll et al., 1976). In this publication, Carroll provides a detailed description of components for a comprehensive assessment model. Carroll's model includes initial assessment (following referral for services); on-going evaluation of student progress; and pupil study data (school history, social functioning, academic functioning, cultural/language factors, health status, and career/vocational interests and aptitudes). This model should be considered because it provides a broad perspective of student evaluation.

Teachers of the handicapped in vocational classes can easily become preoccupied with vocational assessment alone. Several elaborate (and expensive) vocational evaluation systems have been developed, seven of which are described in the publication, *A Comparison of Seven Vocational Evaluation Systems* (Botterbusch, 1976). Although many school districts use these systems to identify appropriate job placements for the handicapped or for assessing the feasibility of providing additional vocational training, most districts do not use these systems, at least with the mildly handicapped. Additional information about vocational evaluation systems (work samples, job samples, etc.) can be obtained from the National Resource Center for Materials on Work Evaluation and Work Adjustment, University of Wisconsin-Stout, Menomonie, Wisconsin. Brolin (1976) also provides a wealth of information on vocational assessment in his excellent text, *Vocational Preparation of Retarded Citizens*.

Adequate assessment of vocational interests and aptitudes does not necessitate the large expenditures which most vocational evaluation systems require. Furthermore, there are distinct advantages in using tests which are widely used with nonhandicapped persons and thus understood and accepted as valid by most vocational and employment counselors (Hull & Halloran, 1976). There are several vocational interest batteries and a few vocational aptitude measures which do not require reading skills. Nonreading Aptitude Test Battery, for example, provides the same information as the

General Aptitude Test Battery, a widely used instrument in rehabilitation and employment service fields. Sankovsky (1974), and Brolin (1976) describe various standardized and informal tests that can be used to assess vocational interests and aptitudes for persons with handicaps. It is becoming increasingly important for teachers to be aware of the vocational assessment instruments and techniques which are appropriate for the handicapped because of requirements in Pub. L. 94-142 to develop individual education plans based on comprehensive assessment data. A series of articles to appear in *Industrial Education* magazine during 1977-78 will discuss student assessment and its relationship to the instruction of the handicapped.

Instructional assessment is also an important task. The assessment that should precede, accompany, and follow instruction is described in numerous texts. Some very practical formats for monitoring the acquisition of specific skills and concepts are described in the *Vermont Guide for Teaching Special Needs Students* (Halloran, Hull, Morgan, Charles & Lampe, 1975). Discussed in the guide are systems for evaluating such dimensions of performance as accuracy, coherency, intensity, timing, speed, neatness and adherence to directions.

An instrument that is becoming widely used to determine readiness for job placement is the "Social and Prevocational Information Battery," developed at the Rehabilitation Research and Training Center, University of Oregon (Halpern et al., 1975). The battery assesses such items as purchasing habits, budgeting, banking, job related behavior, job search skills, home management, health care, hygiene and grooming, and functional signs. It is a nonreading, group or individually administered test and yields a performance profile which has been normed in Oregon with more than a thousand handicapped (predominantly EMR) students.

Behavioral observation checklists are considered by many evaluation experts to be an essential evaluation tool. Numerous checklists have been developed to assess readiness for job placement and to assess job performance. The Career Training Center for the Handicapped (Bakersfield, California) has developed comprehensive checklists of job-related behaviors to be assessed before, during, and after job placement (Schuetz, n.d.). Examples of informal observation forms may be available from several of the exemplary programs described in the publications noted in Table 3. Procedures for developing various types of informal observation instruments are described in numerous behavior modification texts. For an excellent description of these techniques, see *Measurement of Classroom Behavior* by Egner and Fox (1970). The assessment of classroom interaction as a technique for improving instruction in vocational programs for the handicapped is briefly described in *Professional Development of Vocational Special Needs Personnel: A Final Report* (Hull & Halloran, 1974).

PROFESSIONAL ORGANIZATIONS

Persons vitally interested in the development of vocational education for the handicapped have formed two national organizations, one under the auspices of the American Vocational Association (AVA) and the other as a division of the Council for Exceptional Children (CEC). The National Association of Vocational Education Special Needs Personnel (NAVESNP) was formed in 1974 to serve as a sounding board for vocational educators who work with disadvantaged and/or handicapped students. Membership in AVA is not a prerequisite for membership in NAVESNP which has both regional and state organizations. The AVA is exploring the feasibility of publishing a quarterly journal which will focus on vocational education for special populations. Presently the group publishes a national newsletter and through its dissemination it has been influential in promoting legislation and other activities that will benefit vocational education for the handicapped.

The Division of Career Development (DCD) became an official subdivision of the Council for Exceptional Children in 1976. Membership in CEC is prerequisite to membership in CEC-DCD. The primary purpose of the CEC, as stated in its by-laws, is:

To promote the career development of exceptional children, youth, and adults in order to bring about efficient and effective programs of career awareness, exploration, preparation and assimilation for exceptional individuals from early childhood through adulthood.

The secondary purpose of the organization is:

To encourage and promote professional growth, research, legislation, information dissemination, technical assistance, and interactions among CEC divisions and other organizations concerned and involved in the career development of exceptional individuals.

There are numerous other professional organizations which have expressed an interest in the vocational preparation of handicapped persons. Active participation in these groups is important because they are the spawning grounds for many of the ideas and activities which ultimately will represent the forward thrust of the movement to provide vocational preparation for every handicapped person who desires it and can benefit from it.

RECOMMENDATIONS FOR THE FUTURE

It is clearly evident that vocational education for the handicapped is a rapidly growing field. A substantial amount of soft money--startup funds--is now available to stimulate the development of programs and services, research, demonstration and innovative activities, and personnel preparation. Hopefully, the personnel attracted to the field by the availability of these funds will develop continuing commitments to vocational programming for the handicapped. However, as the resources of the moment deteriorate, the vocational needs of many handicapped persons will continue to be met through the excellent programs and services that are under development. To a large degree, the future of vocational education for the handicapped will depend upon and be shaped by the extent to which the recommendations now in print are carried out by various groups.

In November of 1976, numerous recommendations for the future were made by participants in a "Pathways to Employment Conference" sponsored by the President's Committee on Employment of the Handicapped in Washington, D.C. Similar recommendations and resolutions have been made by various professional groups and advisory boards. It is up to these groups and to individual advocates for the handicapped to keep the issues alive until they have been acted upon. The future of vocational education for the handicapped is dependent mostly upon the individuals and groups who influence educational policy making and can marshal the political backing for essential legislation. There is an important role for every concerned individual or group. Perhaps this role is best summarized in the following sample of recommendations expressed by various advocacy groups and summarized by Phillips et al. (1977).

RECOMMENDATIONS FOR PERSONS WHO WORK DIRECTLY WITH THE HANDICAPPED

- Expect more from handicapped persons than in the past. Assume that most can succeed in education and in careers if given the right opportunities. Replace "busy" work with more skilled, technical, and professional career opportunities.
- Improve education for the handicapped by moving toward individualized, competency-based instruction.
- Participate in joint curriculum development projects between special education, vocational education and adult education.
- Improve communications between handicapped and nonhandicapped individuals. Seek and listen to each other's input in an open, supportive manner.

RECOMMENDATIONS FOR SUPPORT PERSONS IN COLLEGES, UNIVERSITIES, RESOURCE CENTERS

- Develop an aggressive outreach program to actively recruit handicapped persons for programs, especially postsecondary programs.
- Continually survey the available local, state, and federal funding sources which can be pursued. Conduct workshops on grantsmanship for local leaders in education.
- Increase cooperative preservice and inservice education offerings in the area of career/vocational development of handicapped individuals.
- Develop and disseminate files on community resources available for assisting handicapped individuals to obtain employment.

RECOMMENDATIONS FOR STATE AGENCY PERSONNEL AND POLICY SHAPERS

- Develop short- and long-range plans for multidisciplinary, interagency coordinated programs and services for handicapped persons.
- Develop and publish clear policy statements on meeting the career and vocational needs of handicapped individuals and urge the development of comprehensive, mainstreamed career and vocational programs.
- Initiate efforts for a strong statewide public relations, information, and education effort to acquaint the public with the needs and abilities of handicapped persons as well as the services that are available to assist them.
- Develop one-year and five-year plans for action. Set goals, objectives, priorities and timelines. Decide procedures for filling the gaps noted through needs assessment.

CONCLUSIONS

The results of a nationwide effort to identify every unserved handicapped child indicates that public schools can expect up to 12 percent of their enrollment to require special educational services (Child Find, 1976). This means that, on the average, approximately 12 percent of a school district's eligible enrollment will require special provisions as part of an appropriate education--one leading to satisfactory career, community and personal adjustment. However, statistics for the 1974-75 school year reveal that the average handicapped representation was only 1.7 percent of the enrollment in vocational education programs across the nation (Lee, 1976).

The fall of 1977 marks the first time in the history of public education that all school districts will be required by Pub. L. 94-142 to provide every handicapped child a free, appropriate education. Fulfilling this mandate will require all segments of public education to become actively involved in meeting the needs of the handicapped. Most assuredly, vocational education will be called upon to play an important role. No longer can vocational educators be content to have the handicapped comprise less than 2 percent of the enrollment in vocational education.

Vocational education has much to contribute toward an appropriate education for the handicapped. However, vocational leaders must understand that to appropriately serve the handicapped all vocational subject areas and all types of instructional settings must be made fully accessible to the handicapped persons who can profit by them. The emphasis of the future must be one of equal access and maximum accommodation.

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APPENDIX A

INFORMATION SYSTEMS ON THE HANDICAPPED

The National Center on Educational Media and Materials for the Handicapped (NCEMMH), (The Ohio State University, Columbus, Ohio), provides national leadership in research, development, training, and dissemination activities related to the use of media, materials, and educational technology in the education of handicapped children. NCEMMH also provides the national back-up services required by local, state, and regional units such as: information services relative to instructional materials for children and media-training materials for teachers; production and distribution assistance to creators whose efforts increase the materials supply; and clearing-house functions for the nation's problems, ideas, and solutions in the realm of media for handicapped learners (NCEMMH, 1976, p. ix.).

The National Instructional Materials Information System (NIMIS) is a computer-based interactive retrieval system specifically developed for the purpose of assisting teachers, parents, and other educators in locating information about instructional materials in the field of special education. An on-line interactive retrieval system enables an individual to "converse" with a computer, asking questions and getting immediate answers. The answers are given in the form of information that includes bibliographic information and abstracts or descriptions of the materials. Each NIMIS entry includes, if available, items of identification such as the following: author, title, publisher, price, abstract/description. The ultimate objective of NIMIS is to provide users with as much information describing educational appropriate special education instructional materials as is available and feasibly reportable (NCEMMH, 1976, p. xi).

The Council for Exceptional Children Information Services, 1920 Association Drive, Reston, Va.), comprehensively identifies and acquires literature on the education of handicapped and gifted children. Much of this literature is unavailable from commercial sources. The Center also accesses the ERIC file in other fields such as Early Childhood Education, Education of the Disadvantaged, Career Education, Media and Technology and others. Sources include such items as: (1) education literature gathered from colleges and universities; state, local and federal agencies; and special projects; (2) nearly 15,000 citations from the Exceptional Child Education Abstracts file (3,000 citations added

annually); (3) hundreds of research and scholarly journals; (4) "how to" publications; (5) curriculum guides; (6) teacher activity manuals; (7) administrative surveys; (8) guidelines; (9) non-print media (tape cassettes); and (10) many more (CEC Information Services, Information brochure, 1974).

Special Education Instructional Materials Centers (operated in some but not all states) supply instructional materials, professional materials and technical assistance to those working with handicapped children and youth. The SEIMCs are usually located in regional centers. Coordination, leadership and funding for the SEIMC systems are provided by state education agencies. Services of most SEIMCs include: centralized lending libraries which provide teachers with the opportunity to borrow and evaluate instructional materials on a short-term basis; inservice training related to the utilization of materials; and technical assistance to school districts in the development of their own resource systems (Texas State Learning Resource Center, Information Brochure, 1976).

Special Education Local Resource Systems (SERS) are systems designed to provide effective delivery of media and materials services to eligible users working with handicapped students at the local district or special education co-op level. The purpose of the SERS is to upgrade the instructional program for handicapped students by providing them and their instructors with ready access to appropriate instructional materials, personnel trained in the use of these materials, and other needed resources (Texas State Learning Resource Center, Information Brochure).

Vocational Education Resource Materials Centers (operated in some but not all states) are designed to: encourage and support curriculum development and instructional activities in vocational education and career development through the collection and dissemination of appropriate materials; supplement and complement efforts of state and local personnel by identifying needed resources for use in instructional workshops and with other developmental activities; and encourage use of resource materials and services in all appropriate programs of teacher education and staff development (preservice as well as inservice), and in classroom implementation (Wisconsin Vocational Studies Center, University of Wisconsin-Madison, 1976, p. ii).

Vocational Education State Research Coordination Units provide state-wide leadership and consultant services to agencies, institutions, and organizations in planning, initiating, coordinating, and evaluating research and development projects. They also serve each state by identifying research needs and contracting with agencies and institutions

to conduct research. Many RCUs function as depositories for research projects that have been carried out in other states. They also can serve as a referral source to agencies which furnish instructional materials.

The Center for Vocational Education (The Ohio State University) has as its primary mission to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning and preparation. The Center has 7 major divisions: Research and Development, Special Projects, Personnel Development, Information and Field Services, Evaluation, Post Secondary Education, and International Programs. The Information and Field Services division operates two information dissemination systems of benefit to vocational special needs personnel--one is the ERIC Clearinghouse on Career Education; the other is the publication, *Abstracts of Instructional and Research Materials* (AIM/ARM).

Educational Resources Information Center (ERIC) is a national information system designed and supported by the U.S. Office of Education and provides ready access to results of exemplary programs, research and development efforts, and related information that can be used in developing more effective educational programs. Through a network of specialized centers or clearinghouses, each of which is responsible for a particular educational area, current significant information relevant to education is monitored, acquired, evaluated, abstracted, indexed, and listed in ERIC reference products. Through these reference publications any educator, anywhere in the country, has easy access to reports of innovative programs, conference proceedings, bibliographies, outstanding professional papers, curriculum-related materials, and reports of the most significant efforts in educational research and development (ERIC, 1970, p. 5).

National Rehabilitation Research and Training Centers are supported in part by the Division of Social and Rehabilitation Services (HEW) on a regional basis. The major purpose of these centers is to initiate applied research aimed toward alleviating disability, reducing dependency, and formulating more effective rehabilitation service delivery systems. The centers also seek ways to share research findings with and participate in the training of all personnel who prepare the disabled for employment (Siegelman, 1975).

National Resource Center for Materials on Work Evaluation and Work Adjustment, located at the University of Wisconsin at Stout, is a national source for the retrieval, development, and dissemination of literature, materials, and procedures on work evaluation and adjustment. Much of their activity is directed to assisting individuals who work

with handicapped persons in rehabilitation facilities and sheltered workshops.

National Curriculum Coordination Network for Vocational Technical Education is funded by the Bureau of Occupational and Adult Education to encourage multi-regional curriculum projects. The Network operates out of six regional centers and assists participating states to identify curriculum needs, coordinate curriculum development activity, and disseminate curriculum materials. Some occupational areas have made much greater use of the Network than others, but assistance is available through the Network to aid all occupational areas to develop comprehensive and timely curricula. The Network has yet to address the curriculum needs of the handicapped in a comprehensive manner.

APPENDIX B

BIBLIOGRAPHIES OF RESOURCE MATERIALS FOR THE HANDICAPPED

<u>Title</u>	<u>Source</u>
<i>Annotated Bibliography of Prevocational-Vocational Materials for Students with Special Needs.</i> (MIMC, 1977).	Minnesota Instructional Materials 3300 Century Avenue North Center White Bear Lake, Minnesota
<i>Bibliography of Research Projects, Demonstration Projects, and Other Materials Relating to: Career Education for the Handicapped</i> Two volumes. (ETS, 1974).	Educational Testing Service Princeton, New Jersey
<i>Bibliography of Vocational Education, Industrial Arts and Special Education Materials for Handicapped Students.</i> Hippolitus & Eddy, (1973).	Committee on Education and Youth Development President's Committee on Employment of the Handicapped Washington, D.C.
<i>Career/Vocational Education Materials,</i> (TSLRC, 1976).	Texas State Learning Resource Center University of Texas Austin, Texas
<i>Career/Vocational Instructional Materials for the Retarded.</i> Malever and Matyas (1975).	Project PRICE College of Education University of Missouri Columbus, Missouri
<i>A Selected Bibliography for Vocational Training and Placement of the Severely Handicapped.</i> Christensen, et al., (1975).	American Institutes for Research in the Behavioral Sciences Palo Alto, California
<i>Vocational Education Resource Materials: Handicapped and Special Education.</i> Lambert et al. (Annual Update).	Center for Studies in Vocational and Technical Education University of Wisconsin-Madison Madison, Wisconsin

*Vocational Instructional
Materials for Students with
Special Needs.* Towne and Wallace,
(1972).

Northwest Regional Education
Laboratory
700 Lindsay Bldg.
710 S.W. 2nd Ave.
Portland, Oregon

*Vocational Training and Job
Placement of the Mentally Retarded:
An Annotated Bibliography.* DeBusk
and Luchsinger, (1973).

Research & Training Center in
Mental Retardation
Texas Tech University
Lubbock, Texas

APPENDIX C

RESOURCES FOR MATERIALS FOR PRESERVICE AND INSERVICE PERSONNEL

<u>Title and Author(s)</u>	<u>Source*</u>
<i>Competency-Based Inservice Training for Coordinators of Special Needs in Vocational Education.</i> Weatherman and Krantz, 1976.	Department of Educational Administration University of Minnesota St. Paul, Minnesota
<i>Improving Education and Employment Opportunities for the Handicapped: Expanding the Commitment of Vocational and Special Education. Report of a National Teacher Education Workshop.</i> Braun, Albright, and Evans, 1977.	Department of Vocational and Technical Education College of Education University of Illinois Urbana, Illinois
<i>Issues in the Preparation of Personnel for the Vocational Programing of Special Needs Students: Synopses of Selected Materials.</i> Abbas and Sitlington (1976).	Department of Vocational and Technical Education College of Education University of Illinois Urbana, Illinois
<i>Preparing Teachers of Industrial Education for Disadvantaged and Handicapped Children at the Secondary Level (A Model for Curriculum Development).</i> Kruppa, Hirtz, and Thrower (1973).	Department of Industrial Arts Trenton State College Trenton, New Jersey
<i>Preparing Vocational and Special Education Personnel to Work with Special Needs Students.</i> (1977). Brock.	Department of Special Education University of Wisconsin--Stout Menomonie, Wisconsin

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of Handicapped Students: A Final
Report.* Hull and Halloran
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Special Needs Students:
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Evans, Abbas, Frison (1976).

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Personnel Services Division
Vermont State Department of
Education
Montpelier, Vermont

Department of Vocational and
Technical Education
College of Education
University of Illinois
Urbana, Illinois